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UNCLAS PRETORIA 002830

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E.O. 12958: N/A

TAGS: [KNNP](#) [ENRG](#) [TRGY](#) [SF](#)

SUBJECT: SOUTH AFRICAN GOVERNMENT ANNOUNCES SAFARI NUCLEAR
REACTOR CONVERSION TO LEU

REF: A. 03 SECSTATE 306217

[B.](#) 03 PRETORIA 05509

[C.](#) STATE 092684

[D.](#) PRETORIA 001974

[¶](#)1. (U) On July 18, 2005, the Department of Minerals and Energy (DME) issued a press release announcing the South African Government's intention to phase out the use of Highly Enriched Uranium (HEU) fuel in its Safari research reactor located in Pelindaba. The press release states that the remaining HEU will be used for the production of medical radioisotopes, and that conversion will guarantee such production for a longer period. The full release reads as follows:

Begin text.

The Minister of Minerals and Energy, Mrs. Lindiwe Hendricks, has announced that the SAFARI-I nuclear research reactor of the South African Nuclear Energy Corporation (Necsa) located at Pelindaba will be converted from using High Enriched Uranium (HEU) to Low Enriched Uranium (LEU).

"This marks yet another milestone in our government's programme to ensure that the safety of nuclear materials is enhanced globally." the Minister said.

SAFARI-1 was commissioned in the 1960's as a Materials Test Reactor (MTR) and is now mainly utilised for the production of radioisotopes for nuclear medicine applications. The remaining HEU will generally be applied to the manufacturing of medical isotopes, mainly Molybdenum-99, used in nuclear medicine diagnostics.

The conversion of SAFARI-1 ensures that the future of the South African medical isotope production can be guaranteed for a longer period.

There is increased effort internationally to phase out the use of HEU in nuclear research reactors. The decision by the Minister, which is also supported by Cabinet, ensures that South Africa is in-step with the rest of the world. "This is just one of a number of measures that we will be announcing which are aimed at ensuring the sustainability and integrity of our nuclear sector," the Minister added.

Necsa will now convert its research reactor fuel manufacturing plant to use LEU. This conversion will be undertaken over a period of approximately three years and will provide several opportunities for young scientists to be engaged in new development projects.

The conversion will be regulated by the National Nuclear Regulator (NNR) and monitored by the International Atomic Agency (IAEA).

Additional Technical Info:

Many research reactors worldwide are fuelled by High Enriched Uranium (HEU) with a concentration of 90% of Uranium-235 (U-235). The use of HEU poses challenges in that it can also be used as source material in nuclear weapons. HEU is classified as uranium material with a concentration of more than 20% U-235, whilst Low Enriched Uranium (LEU) contains less than 20% U-235. Natural Uranium consists mostly of U-238 isotope, with about 0.7% of U-235. Commercial (power) nuclear reactors use natural uranium that has been enriched from 3 to 20% of U-235.

End text.

[¶](#)2. (SBU) DME is aware of U.S. offers of technical and funding support for LEU conversion (Ref A), and that conversion is a pre-requisite for the return of spent U.S.-origin fuel assemblies to the United States. Post recommends that we re-engage the South Africans on these issues within the context of a Joint Standing Committee on Nuclear Energy Cooperation (JSCNEC). DME has advised us to expect soon a favorable response to Secretary Rice's letter of May 19 (Ref C) concerning the establishment of a JSCNEC.

